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EXAMINER

BRIER, JEFFERY A

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,148

Applicant(s)

MUTOH, GENNOSUKE

Examiner

Jeffery A. Brier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-19 and 21-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-19 and 21-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The Amendment filed on 12/05/2005 has been entered. The proposed drawing changes are approved and they satisfy the objections to the drawings raised in the 6/3/2005 office action. However, the handwritten Prior Art needs to be typed. The amendments to claims 39-57 overcomes the 101 and 112 rejections of claims 39-57 raised in the 6/3/2005 office action. The amendments to the specification overcomes the objection to the specification raised in the 6/3/2005 office action.

Response to Argument

2. Applicants argument filed on 12/05/2005 concerning the 102 rejection based upon Suzuki have been fully considered, however, they are not persuasive. Page 41 line 22 to page 57 line 20 of applicants specification discusses how the process, see figure 14, adjusts the time needed to process an image in order for the process to be completed within the setting time T_t . Applicants claim 4 is an apparatus claim, but, it is not a means plus function claim. Applicants claim 23 is a method claim, but, it is not a step plus function claim. Thus, these claims are broader than the means and steps found in the specification. Suzuki discusses performing the process within a minimum amount of time. One of ordinary skill in the art would recognize that Suzuki's use of the term "relatively short" and "minimum" is actually an amount of time

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acceptable to perform the process. Suzuki at paragraphs 0006, 0009, 0127, 0135, and 0231 discusses “relatively short” and “minimum” time which is a finite amount of time since one of ordinary skill in the art recognizes image processing requires time. Therefore, inventor Suzuki determined an amount of time that is “relatively short” and “minimum” and selected the methods 1 to 4 and step S17 such that a “relatively short” and “minimum” time is needed for the resolution conversion to be performed. Claims 4 and 23 need to be amended to claim the sharing-ratio determining part or step of the system is performing the adjustment and not inventor Suzuki (or one of ordinary skill in the art) and not to claim the operator making adjustments which will allow the image processing to be performed within a predetermined maximum amount of time.

Claim 4 claims:

An image processing apparatus for changing the size of image data of an original image...

a sharing-ratio determining part which, based on a comparison result of said comparison part, determines a sharing ratio in processing for changing the size of the image data between a first processing way and a second processing way different from said first processing way (*This is taught by step S17 and by feature quantity extractor 309.*),wherein:

said sharing-ratio determining part adjusts the sharing ratio in the processing between the first and second processing ways so that the entire process of a predetermined image size-change processing is completed within a

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given time duration when a required processing time which is taken for performing the entire processing of the predetermined image size-change processing exceeds the given time duration (*Paragraphs 0006, 0009, 0100, 0127, 0135, and 0231 discusses Suzuki's system allows for the process to be performed within a "relatively short" or "minimal" time duration which is inherently a given time duration.*). The claimed sharing part is not limited to how the part performs the adjustment thus, when inventor Suzuki adjusted the process to perform the process within a "relatively short" or "minimum" time the part made the adjustment "so that" the process was performed within the "relatively short" or "minimum" time. The part is not claimed to perform an analysis of the type described by applicants specification at 41 line 22 to page 57 line 20, thus, the claim covers the analysis inventor Suzuki made in adjusting the process to be performed within the "relatively short" or "minimum" time.

Claim 23 claims:

An image processing method (the following should be deleted as claimed in claim 20)for changing the size of image data of an original image...

a sharing-ratio determining step, based on a comparison result of said comparison part (part should be step), determining a sharing ratio in processing for changing the size of the image data between a first processing way and a second processing way different from said first processing way (*This is taught by step S17 and by feature quantity extractor 309.*),wherein:

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said sharing-ratio determining step comprises the step of adjusting the sharing ratio in the processing between the first and second processing ways so that the entire process of a predetermined image size-change processing is completed within a given time duration when a required processing time which is taken for performing the entire processing of the predetermined image size-change processing exceeds the given time duration (*Paragraphs 0006, 0009, 0100, 0127, 0135, and 0231 discusses Suzuki's system allows for the process to be performed within a "relatively short" or "minimal" time duration which is inherently a given time duration.*). The claimed sharing step is not limited to how the step performs the adjustment thus, when inventor Suzuki adjusted the process to perform the process within a "relatively short" or "minimum" time the step made the adjustment "so that" the process was performed within the "relatively short" or "minimum" time. The step is not claimed to perform an analysis of the type described by applicants specification at 41 line 22 to page 57 line 20, thus, the claim covers the analysis inventor Suzuki made in adjusting the process to be performed within the "relatively short" or "minimum" time.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 21-57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 23 depends upon

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cancelled claim 20, thus, it is not clear what limitations are in this claim. At lines 6-7 "said comparison part" lacks antecedent basis in the claim and it "part" should be changed to "step". Claim 39 depends upon cancelled claim 20, thus, it is not clear what limitations are in this claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 2-19, and 21-57 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki et al, U.S. Patent Application Publication No. 2005/0008258.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an

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appropriate showing under 37 CFR 1.131. Also the assignment needs to be common at the time of the invention.

Suzuki et al, U.S. Patent Application Publication No. 2005/0008258, corresponds to the Japanese patent application publication cited by applicant, 2001188900. This reference teach comparing an image information value in steps S16 and S17 which indicates predetermined image information of the original image, with a corresponding predetermined reference value, hue, which is previously set for each of the predetermined image information. Suzuki also teaches a sharing-ratio determining part which, based on a comparison result of said comparison part, determines a sharing ratio in processing for changing the size of the image data between method 1, method 2, method 3, and method 4 where each of the methods are different processing way.

A detailed analysis of the claims follows.

Claim 4:

Suzuki teaches an image processing apparatus for changing the size of image data of an original image (See paragraph 0060 which describes: [0060] In the present invention, the term image enlargement refers to multiplying or increasing the number of pixels in an input image, and thereby generating an image having a larger number of pixels. A term enlarging ratio (ER) or image enlarging ratio refers to a ratio of the number of pixels of a generated image to the number of pixels of an input image in a horizontal direction, or a ratio of the

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number of pixels of the generated image to the number of pixels of the input image in a vertical direction.), comprising:

a comparison part comparing an image information value which indicates predetermined image information of the original image (The features of the image are compared. See paragraph 0066 which describes: [0066] In step S116, image feature quantities or an amount of image characteristics is extracted from the sampled M.times.N pixel data. In step S17, one of the four pixel multiplying methods, which is described above, is selected according to the extracted image feature quantities. In step S118, the process branches to the selected pixel multiplying method, i.e., one of methods 1 to 4. See paragraphs 0082 and 0083 which describes: [0082] In step S16, the CPU 106 extracts image feature quantities or an amount of image characteristics from the sampled M.times.N reference pixel data. In this example, as the image feature quantities, the CPU 106 extracts image feature quantities, such as the number of colors in the reference pixels, the number of hues of the reference pixels, similarity of hues among the reference pixels, linking information among the reference pixels, etc. [0083] In step S17, the CPU 106 selects one of the plural pixel multiplying methods (i.e., the pixel multiplying methods 1 through 4), according to the extracted image feature quantities, for applying the selected multiplying method the target pixel X. FIG. 7 is a flowchart illustrating operational steps for selecting one of the pixel multiplying methods. See paragraph 0101 which describes: [0101] Referring back to FIG. 13, in steps S22-6 through S22-18, the CPU 106 performs an adaptive luminance conversion for the luminance Y obtained in the

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above described bi-directional linear interpolation process according to image feature quantities. As the image feature quantities, the CPU 106 uses, for example, a luminance range YR, which is defined as a difference between the maximum luminance value YMAX and the minimum luminance value YMIN among the generated pixels. See paragraph 0177 which describes a comparison part 309 as: [0177] The feature quantity extractor 309 includes a density range detector 309DR, a color and hue detector 309CH and a linked pixel detector 309LP. The feature quantity extractor 309 generates a switching signal 309SW to close one of the switches 307A, 307B, 307C and 307D. The feature quantity extractor 309 also generates an adaptive density control signal 309DC to control an image density of each of the pixels generated in the second enlarger 314. Switching operation for the switches 307A, 307B, 307C and 307D is performed per every single target pixel X in synchronization with the target pixel X inputs.), with a corresponding predetermined reference value which is previously set for each of the predetermined image information (The feature compared in each image is previously set for each image such as YMAX and YMIN see paragraph 0101 which states: As the image feature quantities, the CPU 106 uses, for example, a luminance range YR, which is defined as a difference between the maximum luminance value YMAX and the minimum luminance value YMIN among the generated pixels. Clearly to perform feature quantity extraction a predetermined value needs to be set in feature quantity extractor 309 in order to compare the image to a reference and in order to select a corresponding

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enlarging method. A predetermined reference value is also taught in paragraph 0109.); and

a sharing-ratio determining part which, based on a comparison result of said comparison part, determines a sharing ratio in processing for changing the size of the image data between a first processing way and a second processing way different from said first processing way (*This is taught by step S17 and by feature quantity extractor 309.*), wherein:

said sharing-ratio determining part adjusts the sharing ratio in the processing between the first and second processing ways so that the entire process of a predetermined image size-change processing is completed within a given time duration when a required processing time which is taken for performing the entire processing of the predetermined image size-change processing exceeds the given time duration (*Paragraphs 0006, 0009, 0100, 0127, 0135, and 0231 discusses Suzuki's system allows for the process to be performed within a "relatively short" or "minimal" time duration which is inherently a given time duration.*). The claimed sharing part is not limited to how the part performs the adjustment thus, when inventor Suzuki adjusted the process to perform the process within a "relatively short" or "minimum" time the part made the adjustment "so that" the process was performed within the "relatively short" or "minimum" time. The part is not claimed to perform an analysis of the type described by applicants specification at 41 line 22 to page 57 line 20, thus, the claim covers the analysis inventor Suzuki made in adjusting the process to be performed within the "relatively short" or "minimum" time.

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Claim 2:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein:
said first processing way comprises a way for achieving a high-order image processing for controlling image degradation (*See paragraphs 0064, 0110, 0127, 0154, 0167, 0204, 0230.*).

Claim 3:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein: said second processing way comprises a way of simply changing the number of pixels without changing the respective pixel values (*In paragraph 0064 method 1 inherently does not change the pixel values since method 1 is for uniform image areas. [0064] Each of the four pixel multiplying methods is described as follows. Method 1 applies a uniform pixel multiplying method and is customized for plain single color images, such as a background image, graphic images except image boundaries and vicinities thereof, etc.*).

Claim 5:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein:
said comparison part compares an image data size-change rate required (*This is interpreted to mean time duration to convert the image which is taught by*

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paragraphs 0006, 0009, 0100, and 0127 which discusses that Suzuki's system allows for the process to be performed within a minimal time duration which is inherently a given time duration. Simple method 1 requires less time than complex method 4.) with a predetermined reference value (The reference minimal time selected by the system designer. The claim does not claim how the comparison is performed, thus, any comparison meets the claim limitation.)

instead of comparing the predetermined image information value of the original image (*Paragraph 082 lists many image attributes other than time needed for processing the image.*).

Claim 6:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein:

the information of the image information value and predetermined reference value which said comparison part compares comprises information concerning the data size of the original image (*Data size is a broad term and is met by many aspects of Suzuki such as determining number of colors per pixel, figures 7-9, more colors require more data or such as the data density discussed in paragraphs 0199-0201.*).

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Claim 7:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein:

the information of the image information value and predetermined reference value which said comparison part compares comprises information concerning the number of colors expressible by each pixel of the original image (*Figures 7-9 illustrate determining the sharing ratio based on the number of colors for each pixel. The hue embodiment also teaches this claimed limitation. The luminance embodiment also teaches this claim limitation.*).

Claim 8:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein: the information of the image information value and predetermined reference value which said comparison part compares comprises information concerning the resolution of the original image (*This is met by image density determination and also by determining the color resolution of the image, see figures 7-9.*).

Claim 9:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein: the information of the image information value and predetermined reference value which said comparison part compares comprises information as to whether or not the original image is a color image or a monochrome image

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(The hue and luminance embodiments teach this claim limitation. The image is compared for hue and if the image is monochrome then a lack of hue has been determined. Figures 7-9 illustrate determining the sharing ratio based on the number of colors for each pixel.

A number of one would indicate monochrome.).

Claim 10:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein:

the sharing ratio between the first and second processing ways is determined according to a predetermined attribute of the original image (*The predetermined attribute of the original image may be considered to be the image attributes of the image. Figures 7-9 illustrate determining the sharing ratio based on the number of colors for each pixel.).*

Claim 11:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein:

the sharing ratio between the first and second processing ways is determined according to a permissible time duration for completing the entire process of a relevant image size-change processing (*The claimed permissible time duration is the minimal time duration discussed by Suzuki at paragraphs 0006, 0009, 0100, and 0127. These paragraphs discuss that Suzuki's system*

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allows for the process to be performed within a minimal time duration which is inherently a given time duration.).

Claim 12:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein: said first processing way comprises a process for preventing a jaggy from becoming conspicuous (*Method 4 is selected to minimize the formation of jaggies during the size change process. Paragraph 0064 states: Method 4 applies a multiple patterned pixel embedding method and is customized for images, such as anti-alias processed text strings and drawings, text strings and drawings having shadows, etc.).*

Claim 13:

Suzuki teaches the image processing apparatus as claimed in claim 10, wherein:

the predetermined attribute of the original image which is used for determining the sharing ratio by said sharing-ratio determining part comprises the number of used colors in the original image (*This claim limitation is met by the method illustrated in figure 7 steps S17-1 to S17-5 as well as figures 8-9 and the hue embodiment. Also note method 2 is for full color images, thus, the feature extraction determining the methods selected is based on the numbers of colors used in the original image..).*

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Claim 14:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein:

the sharing ratio between the first and second processing ways is determined by said sharing-ratio determining part according to the contents of image processing in the entire process of a relevant image size-change processing (*This claim limitation is met by feature extractor 309 and the process outlined in paragraph 0064 which discusses the selection of methods 1-4.*).

Claim 15:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein an application of the first and second processing ways is made in such a manner that one of the first and second processing way is applied, and, after that, the other processing way is applied (*This claim seems to be claiming selecting a first processing way then selecting a second processing way. This is met by an image where a first pixel selects the first processing way and the next pixel selects the second processing way. This claim also seems to be claiming selecting a process that processes a first way and then a second way. This is met by method 2 where bi-directional linear interpolation first interpolates in a first direction and the secondly interpolates in a second direction usually perpendicular to the first direction.*).

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Claim 16:

Suzuki teaches the image processing apparatus as claimed in claim 15, wherein the application of the first and second processing ways is made in such a manner that one of the first and second processing way, which one requires a longer processing time, is applied first, and, after that, the other processing way is applied (*This claim seem to be claiming a selecting a first processing way then selecting a second processing way. This is met by an image where a first pixel selects the first processing way and the next pixel selects the second processing way where the second pixel selects a method such as method 1 that takes less time then the first pixel which selects for example the more time consuming method 4.*).

Claim 17:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein an application of the first and second processing ways is made in such a manner that one of a first mode and a second mode is selected according to a comparison result of said comparison part, wherein said first mode is such that both said first and second processing ways are applied in a combination manner (*This claim seems to be claiming selecting a first processing way then selecting a second processing way. This is met by an image where a first pixel selects the first processing way and the next pixel selects the second processing way. This claim also seems to be claiming selecting a process that processes a first way and then a second way. This is met by method 2 where bi-directional linear*

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interpolation first interpolates in a first direction and the secondly interpolates in a second direction usually perpendicular to the first direction. The interpolation in each of the first and second direction may be divided into a first interpolation and a second interpolation.), and said second mode is such that only one of the first and second processing ways is applied (Method 1 is a simple operation that does not interpolate by using both of the above described first and second interpolation ways but instead would only need to use one of the two interpolation ways.).

Claim 18:

Suzuki teaches the image processing apparatus as claimed in claim 17, wherein said second mode is such that only one of the first and second processing way, which one requires a longer processing time, is applied (*Method 4 may be divided into two interpolation ways and while method 3 may expressed having the one which is more lengthy in processing the second interpolation way. Note both method 3 and 4 have a common process of pattern pixel embedding while method 4 has an additional interpolation function. The interpolation way in common would have longer processing time due to it covering more processing than the second interpolation way.*).

Claim 19:

Suzuki teaches the image processing apparatus as claimed in claim 4, wherein: said first processing way comprises an image size-change processing

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for an integer size-change rate (*The word comprises is open ended thus integer multiplier MR and correction factor $CF=ER/MR$ meets this claim limitation.*), and said second processing way comprises an image size-change processing for a size-change rate which includes a fraction (*The word comprises is open ended thus multiplier MR and correction factor $CF=ER/MR$ meets this claim limitation by including in the size changing process both an integer MR and a fraction CF.*).

Claims 21-38:

These claims are method claims that correspond to apparatus claims 1-19 and claim the same function that apparatus claims 1-19 claim, thus, claims 20-38 are rejected for the same reasons given above for claims 1-19.

Claims 40-57:

These claims are program for causing a computer to execute each step of the method claims 21-38. Suzuki uses a program to cause the computer to execute each method step, thus, Suzuki teaches these claims. Claim 39 depends upon cancelled claim 20 and it is rejected for the same reasons that claims 40-57 are rejected.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffery A Brier whose telephone number is (571) 272-7656. The examiner can normally be reached on M-F from 7:00 to 3:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi, can be reached at (571) 272-7664. The fax phone Number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information

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for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffery A Brier
Primary Examiner
Art Unit 2672